

WHAT IS CLAIMED IS:

1. A semiconductor manufacturing apparatus using a plurality of gases for processing, comprising:

a chamber into which said plurality of gases flow;

5 a plurality of mass flow controllers provided corresponding to said plurality of gases;

a mass flowmeter measuring each flow rate of said plurality of gases; and a plurality of valves controlling each flow of said plurality of gases;

and

10 a control unit controlling opening/closing of said plurality of valves such that said plurality of gases flow into said chamber directly during an operation of said semiconductor manufacturing apparatus, and controlling opening/closing of said plurality of valves such that any one of said plurality of gases flows into said mass flowmeter when inspecting said mass flow controller.

2. The semiconductor manufacturing apparatus according to claim 1, further comprising

a plurality of mass flowmeters, wherein

5 said control unit selects a mass flowmeter having an optimum flow rate range among said plurality of mass flowmeters in accordance with a flow rate range of a mass flow controller to be inspected.

3. The semiconductor manufacturing apparatus according to claim 2, wherein

5 said control unit calculates an actual flow rate of a gas based on a flow rate set for said mass flow controller to be inspected and a conversion factor, and selects a mass flowmeter having an optimum flow rate range among said plurality of mass flowmeters.

4. The semiconductor manufacturing apparatus according to claim 1, wherein

5        said control unit selects any mass flow controller for inspection from  
said plurality of mass flow controllers in accordance with an instruction  
from an operator.

5. The semiconductor manufacturing apparatus according to claim  
4, wherein

5        said control unit inspects said mass flow controller selected for  
inspection based on an inspection range of said mass flow controller and an  
increment of said inspection range set by the operator.

6. The semiconductor manufacturing apparatus according to claim  
5, wherein

      said control unit sets any value up to full scale for said mass flow  
controller as the inspection range of said mass flow controller.

7. The semiconductor manufacturing apparatus according to claim  
1, wherein

      said control unit determines if a mass flow controller under  
inspection is acceptable based on a predetermined reference value, and

5        said semiconductor manufacturing apparatus further comprising a  
display unit displaying a result of said determination of said control unit.

8. The semiconductor manufacturing apparatus according to claim  
1, further comprising

      a second mass flow controller provided in parallel to a first mass flow  
controller among said plurality of mass flow controllers, wherein

5        said first and second mass flow controllers are of a same type, and  
      said control unit controls opening/closing of said plurality of valves  
so that said second mass flow controller operates when an anomaly is  
detected in said first mass flow controller.

9. The semiconductor manufacturing apparatus according to claim  
1, further comprising

an external port to which external inspection equipment is connected, wherein

5        said control unit controls opening/closing of said plurality of valves so that any one of said plurality of gases flows into said external inspection equipment via said mass flowmeter and said external port.

10.    A semiconductor manufacturing apparatus using a plurality of gases for processing, comprising:

      a chamber into which said plurality of gases flow;  
      a first sensor measuring the state of said chamber;  
5        a second sensor provided in parallel to said first sensor, said first and second sensors being of a same type;  
      a first valve provided between said chamber and said first sensor;  
      a second valve provided between said chamber and said second sensor; and  
10      a control unit controlling opening/closing of said first and second valves so that said second sensor operates when an anomaly is detected in said first sensor.

11.    A semiconductor manufacturing apparatus using a plurality of gases for processing, comprising:

      a chamber into which said plurality of gases flow;  
      a plurality of mass flow controllers provided corresponding to said 5        plurality of gases;  
      a plurality of valves controlling each flow of said plurality of gases; and  
      a control unit controlling opening/closing of said plurality of valves such that said plurality of gases flow into said chamber directly during an 10      operation of said semiconductor manufacturing apparatus, and controlling opening/closing of said plurality of valves such that, when inspecting a first mass flow controller, a first gas flows into said first mass flow controller via a second mass flow controller.

12. The semiconductor manufacturing apparatus according to  
claim 11, wherein  
said first gas flows into said second mass flow controller during an  
operation of said semiconductor manufacturing apparatus.

13. The semiconductor manufacturing apparatus according to  
claim 11, wherein  
a bypass line is formed in which said first gas flows into said first  
mass flow controller via said second mass flow controller, by providing block  
valves at upstream and downstream of said second mass flow controller.  
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14. The semiconductor manufacturing apparatus according to  
claim 11, wherein  
none of the plurality of gases flow into said second mass flow  
controller during an operation of said semiconductor manufacturing  
apparatus.  
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